

Oversight News

Newsletter of the Commonwealth's environmental oversight of the Paducah Gaseous Diffusion Plant

Agencies Plan Burial Grounds Investigation

State and federal regulators, Department of Energy (DOE) personnel and their contractors have been meeting since September to discuss plans for investigation of several burial grounds at the Paducah Gaseous Diffusion Plant (PGDP). DOE submitted a "scoping document" to regulators on Nov. 23. The scoping document is a precursor to a work plan due on June 30, 2005, that will guide a remedial investigation/feasibility study.

As its name suggests, a scoping document establishes the scope of an investigation and feasibility study. The scoping document presents existing information and sample data collected from or near the waste management units under scrutiny. The information is used to plan



A burial ground beneath this area in the northwest corner of the Paducah Gaseous Diffusion Plant will be investigated. Photo by Gaye Brewer, Ky. Department for Environmental Protection.

which areas need further investigation and sampling. The results of the investigation are then used to determine if contaminants have been released into the environment, estimate the levels of risk posed by any contaminants of concern, and select and schedule appropriate remedies for any releases requiring action.

The early planning improves the chances that DOE's work plan will meet regulators' expectations and not require extensive revision. Limiting the need for revision in turn helps keep the work plan approval process and subsequent activities, such as the investigation fieldwork, on schedule.

The Burial Grounds Operable Unit (BGOU) consists of solid waste management units (SWMUs) 2, 3, 4, 5, 6, 7, 30 and 145. According to historical records prepared by past plant operators, contents of the eight burial grounds range from construction debris to classified materials. Burial of materials into these units began

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Agencies Plan Burial Grounds Investigation

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in 1950, when the plant was under construction, and ended in the early 1980s. Most of the burial units were active only a few years.

In October and November, before the scoping document was finalized, the involved parties held conference calls to discuss

historical lab results of samples collected from the SWMUs and potential remedies for the eight units. On Dec. 15 and 16, the parties met in Frankfort to evaluate and discuss the submitted BGOU scoping document. Each of the parties brought comments on the document's content and continued to discuss potential alternatives for remediating individual SWMUs.

The parties have continued to meet and discuss the burial grounds project. Comments on the information in the scoping document and proposed remedial technologies will be considered and incorporated into the "D1" (first draft) *Remedial Investigation/Feasibility Study Work Plan for the Burial Grounds Operable Unit*.

By **Vicki Voisard**, Ky. Division of Waste Management

Off-Site Disposal of Scrap Metal Temporarily on Hold

An ongoing project to remove tons of metal from several scrap yards in the northwest corner of the Paducah Gaseous Diffusion Plant (PGDP) faced delays in the last months of 2004.

Beginning in 2003, scrap metal with radiological contamination

was shipped to the Nevada Test Site for disposal as low-level radioactive waste. Department of Energy (DOE) contractors sorting the metal were responsible for determining prior to shipment if scrap met the Nevada site's strict set of waste acceptance criteria.

In September 2004, an internal DOE inspection found that numerous "Sealand" containers awaiting shipment to the Nevada Test Site contained prohibited, or "non-conforming," wastes. Due to the discovery of non-conforming wastes in the containers, the Nevada site temporarily suspended accepting scrap metal shipments from the PGDP.

DOE is in the process of applying for recertification with the Nevada Test Site, which may take a few months. The certification process includes demonstrating that waste characterization and packaging procedures at PGDP will ensure that wastes will meet the Nevada site's acceptance criteria.

By **Leo Williamson**, Ky. Division of Waste Management, Hazardous Waste Branch



Metal removed from scrap yards at the Paducah Gaseous Diffusion Plant was placed into "Sealand" shipping containers like these seen here. Shipments have been suspended because prohibited wastes were discovered in some of the containers. Photo by **Jon Maybriar**, Ky. Division of Waste Management

Personnel News

Several changes in personnel have taken place recently within the Paducah Gaseous Diffusion Plant (PGDP) section of Kentucky's Hazardous Waste Branch.

The Hazardous Waste Branch bid a fond farewell to **Tuss Taylor** on Feb. 15 as he transferred to a supervisor position within the Underground Storage Tank Branch of the Division of Waste Management. Tuss had been involved with regulatory oversight of the PGDP since 1989.

In the early 1990s, Tuss began representing Kentucky at national meetings of groups of states that host Department of Energy (DOE) facilities, including the State and Tribal Working Group and the National Governors Association. He was instrumentally involved with an expansion of Kentucky personnel needed to oversee the many investigation and cleanup projects at the Paducah site.

During Tuss' tenure, a permit for the management of hazardous waste at the Paducah site was issued to DOE in 1991 and reissued in 2004. Tuss was part of

the team that negotiated the Federal Facility Agreement among DOE, Kentucky and the U.S. Environmental Protection Agency to guide cleanup at the site. He was also an *ex officio* member of the Citizens Advisory Board since its formation in 1996.

Leo Williamson joined the PGDP section as an engineer. He holds a bachelor's degree in mechanical engineering from California State University, Long Beach. Leo has worked as both an environmental consultant and a contractor. He has performed extensive fieldwork in the Southern California region for city, state and federal government as well as for private enterprise. His responsibilities with the PGDP section include oversight of the scrap yard metal removal project and burial grounds investigation and maintenance of the facility's 10-year permit to manage hazardous waste.

After five years of on-site environmental oversight at the PGDP, **Gaye Brewer** now inspects drinking water and wastewater treatment facilities in an 11-county area. She recently transferred to the Kentucky

Department for Environmental Protection's Division of Water to be an inspector for the Paducah Regional Office.

Jamie Lowe, who served as the PGDP section secretary, accepted a promotional opportunity to work for the Division of Waste Management's Solid Waste Branch. She now serves as that branch's secretary. Taking Jamie's place is **Kelly Rodgers**, who began working for the PGDP section on Feb. 1. Kelly previously worked as a receptionist at the Kentucky Transportation Cabinet. She has five years' experience working in state government.

Mike Guffey accepted a promotion within the Hazardous Waste Branch. His projects now include updating Kentucky's hazardous waste regulations and working on regulatory interpretation issues. He will continue his work with various waste management and Federal Facility Agreement cleanup projects at the PGDP.

By Lauren McDonald, Ky. Division of Waste Management, Hazardous Waste Branch

www.waste.ky.gov/Programs/hw/PGDP+Section.htm

Web site of the Paducah Gaseous Diffusion Plant section of the Hazardous Waste Branch, Kentucky Division of Waste Management

Featuring:

- ◆ Links to information about Kentucky's program to oversee management of hazardous waste in the state ◆
- ◆ Educational links to Web sites about uranium, nuclear energy, DOE facility decommissioning, the U.S. Environmental Protection Agency and other topics ◆
- ◆ Current and back issues of this newsletter ◆
- ◆ Breaking news

C-400 Record of Decision Nears Approval

The U.S. Department of Energy (DOE), U.S. Environmental Protection Agency (EPA), and the Commonwealth of Kentucky are in the final stages of a process leading to approval of the record of decision for interim remedial action at the Paducah Gaseous Diffusion Plant's C-400 Building. This action will use direct heating technology to remove substantial quantities of trichloroethene, or TCE, from the subsurface near the building, preventing it from further contaminating groundwater at the site.

The Commonwealth issued comments on the first draft of the record of decision (ROD) to DOE on Oct. 15, 2004. Subsequently,

DOE submitted a Comment Response Summary table that addressed each comment received from EPA and Kentucky. The three parties then held a teleconference that provided a forum for state and EPA regulators to address DOE's responses to each group's comments. A few unresolved issues remain to be worked out among the parties, but at press time it was anticipated that the ROD would be approved in February 2005.

Once the ROD has been approved, DOE will have 15 months in which to begin work at the C-400 site. DOE currently anticipates that four years will be required to design, construct and

operate the remedy. The parties hope that at the end of that period much of the TCE now present near the C-400 site will have been removed.

Direct heating involves the installation of an array of electrodes into contaminated soil. Resistance to the flow of current heats the soil and groundwater, causing TCE to vaporize. The vapor can then be captured by a vacuum extraction system and brought to the surface for treatment to remove contaminants.

By Todd Mullins, Ky. Division of Waste Management, Hazardous Waste Branch

Site Management Plan Forecasts 2005 Project Schedule

The Department of Energy (DOE) has submitted its Site Management Plan (SMP) for fiscal year 2005 to the Environmental Protection Agency (EPA) and the Kentucky Division of Waste Management. The SMP, an appendix to the Federal Facility Agreement among DOE, EPA and Kentucky, is submitted annually by Nov. 15. The document describes the strategy and priorities for cleanup at the Paducah Gaseous Diffusion Plant.

Each year the SMP lists specific deliverables, called "milestones," due to regulators during the current and following two fiscal years. Once regulators approve the draft SMP, the milestone dates become enforceable commitments. The SMP also lists anticipated dates for key events and projects beyond that time frame, but those dates are not considered enforceable commitments.

The following documents are listed in the current draft

of the SMP as deliverables for 2005:

- Site Investigation Report for Southwest Plume Sources
- Remedial Investigation/Feasibility Study Work Plan for the Burial Grounds Operable Unit
- Remedial Design Work Plan for Interim Remedial Action at the C-400 Building
- Proposed Remedial Action Plan for Southwest Plume Sources
- Site Evaluation Report for the C-746-S and -T Landfills

When these documents are submitted to regulators, DOE will make copies of them available to the public at the DOE Environmental Information Center, 115 Memorial Drive in Paducah.

By Lauren McDonald, Ky. Division of Waste Management, Hazardous Waste Branch

First Phase of Surface Water Investigation in the Works

Areas and sources of contamination at the Paducah Gaseous Diffusion Plant (PGDP) have been grouped into six “operable units” for planning and evaluation of cleanup activities. One unit, the Surface Water Operable Unit (SWOU), is to be investigated in two phases. Phase I will assess on-site ditches, North/South Diversion Ditch sections 3, 4 and 5, storm sewers, and discharge outfalls permitted under the Kentucky Pollutant Discharge Elimination System. Phase II, scheduled for investigation in 2015, will include Little Bayou and Bayou Creeks and PGDP ditches flowing into them.

The first draft (“D1”) *Sampling and Analysis Plan for Site Investigation and Risk Assessment of the Surface Water*

Operable Unit (On-Site) at the Paducah Gaseous Diffusion Plant was submitted to regulators in April 2004. In July, the Kentucky Division of Waste Management issued comments on the D1 plan. DOE and regulators reached consensus on many of the comments. In December, the division received the D2 (second draft) document. At press time, the document was still under review.

The field sampling strategy proposed in the plan consists of three activities or steps for each area addressed by the SWOU on-site assessment. The first activity will use field screening instruments and lab sampling to detect “hot spots” of contamination. The division and DOE have not reached agreement on what sampling parameters will

be tested for during this activity. The D2 plan recommends uranium-238, cesium-137 and total PCBs as the parameters. An estimated 2,613 samples will be collected during Activity 1.

Activity 2 will involve collection of fewer samples, but each sample will be analyzed for a greater variety of possible contaminants. Sampling parameters proposed for Activity 2 include bulk inorganic chemicals (metals), trichloroethylene (TCE), 1,1,1-trichloroethane (TCA), polycyclic aromatic hydrocarbons (PAHs), and radionuclides. An estimated 400 samples will be collected during Activity 2 and sent to a laboratory. The resulting data will be used for risk assessment purposes.

Storm sewers will be investigated in a different fashion than ditches and outfalls. The first task will involve collecting 24 water samples from sewers to assess if they contain levels of contamination above pre-set screening levels. If results exceed the screening levels, up to 72 additional samples may be collected to further pinpoint the source of contamination. Once a source is identified, subsurface soil samples will be collected to evaluate the extent of contamination in the surrounding soil.

The final step of the investigation is Activity 3. The data gathered during activities 1 and 2, along

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Section 3 of the North/South Diversion Ditch flows northward from the Paducah Gaseous Diffusion Plant. It has been posted as a radiological contamination area.

Photo by Lauren McDonald, Ky. Division of Waste Management



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www.waste.ky.gov/programs/hw/PGDP+Section.htm

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with previously existing data, will be used to predict the potential for contaminant migration from source areas. It will also be used to assess whether additional sediment controls are needed to prevent contaminated surface water from leaving the PGDP via surface water runoff.

After completion of fieldwork, a site investigation report will be submitted to regulators for review. The primary purpose of the report will be to present and interpret results of the field investigation.

By Jon Maybriar, Ky. Division of Waste Management, Hazardous Waste Branch

Kentucky Environmental Oversight News is published quarterly by the Kentucky Department for Environmental Protection's Division of Waste Management. It features information regarding environmental cleanup activities at the Paducah Gaseous Diffusion Plant site and related topics.

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